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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

NGUYEN, HOAN C

ART UNIT PAPER NUMBER

2871

DATE MAILED: 10/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/799,800

Applicant(s)

ROOSENDAAL ET AL.

Examiner

HOAN C. NGUYEN

Art Unit

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 July 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 11-30 is/are pending in the application.
- 4a) Of the above claim(s) 15, 16, 19, 20, 25, 26, 29 and 30 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 11-14, 17-18, 21-24, 27 and 28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

Applicant's arguments with respect to claims 11-14, 17-18, 21-24 and 27-28 based on the Response filed on 19 July 2005 have been considered but are in the same ground(s) of rejection. Therefore, this is Final action.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 11-14 and 21-24 are rejected under 35 U.S.C. 102(b) as being anticipated by Kubo et al. (US6295109B1).

In regard to claims 11 and 21-22, Kubo et al. teach (Figs. 2 and 22) a transfective display device comprising:

- a plurality of pixels, and
- a patterned optical layer that includes a pattern of pairs of first area segments (transmissive regions T) and second area segments (reflective region R), each pair of the plurality of pairs corresponding to each pixel of the plurality of pixels,
- a pair of polarizing layers that sandwich the pixels and the patterned optical layer according to Claim 23

- each pixel includes liquid crystal material sandwiched between electrodes according to Claim 24.

wherein:

- the first area segments provide a first optical retardation, which equals to $\Delta n d_T$, where n is refraction index and d_T is the liquid crystal thickness at the transmissive regions T ,
- the second area segments provide a second optical retardation, which equals to $\Delta n d_R$, where n is refraction index and d_R is the liquid crystal thickness at the reflective regions R ;
- the second optical retardation is substantially less than the first optical retardation since d_R is smaller than d_T .

wherein

Claim 12:

- the pattern provides for pairs of adjacent first area segments and second area segments as shown in Figs. 2 and 22.

Claim 13:

- the pattern provides for a two-dimensional array of pairs of adjacent first area segments and second area segments as shown in Fig. 22.

Claim 14:

- the two-dimensional array of pairs corresponds to an array of pixels in a display device as shown in Fig. 22.

2. Claims 11, 17, 21 and 27 are rejected under 35 U.S.C. 102(b) as being anticipated by Yoshida et al. (US20020047968A1).

In regard to claims 11 and 21, Yoshida et al. (Figs. 1-4) a display device comprising:

- a plurality of pixels (paragraph 36), and
- a patterned optical layer that includes a pattern of pairs of first area segments and second area segments (liquid crystal regions 102a/102b), each pair of the plurality of pairs corresponding to each pixel of the plurality of pixels,

wherein:

- the first area segments provide a first optical retardation,
- the second area segments provide a second optical retardation
- the second optical retardation is substantially different with the first optical retardation (paragraph 61), thereby one of area segments (liquid crystal regions 102a or 102b) should be substantially less than the other.

Wherein

Claims 17 and 27:

- the first area segments include a first polymerized liquid crystal material having a planar orientation at a first angle; and the second area segments include a second polymerized liquid crystal material having a planar orientation at a second angle, the first angle being substantially different from the second angle as Figs. 1-4 shown.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 18 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshida et al. (US20020047968A1) as applied to claims 11, 17, 21 and 27, in view of Ham (US6184961B1).

Yoshida et al. fail to disclose a display device, wherein a difference between the first angle and the second angle is approximately 45 degrees.

Ham teaches (Fig. 5) a display device with the first area segments including a first polymerized liquid crystal material having a planar orientation at a first angle; and the second area segments including a second polymerized liquid crystal material having a planar orientation at a second angle, wherein a difference between the first angle and the second angle is approximately 45 degrees (col. 4 lines 13-20).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify liquid crystal display as Yoshida et al. disclosed with with the first area segments including a first polymerized liquid crystal material having a planar orientation at a first angle; and the second area segments including a second polymerized liquid crystal material having a planar orientation at a second angle, wherein a difference between the first angle and the second angle is

approximately 45 degrees as taught by Ham for preventing the grey level inversion and the color shift and improving the viewing angle characteristics (col. 4 lines 33-36).

Response to Arguments

Applicant's arguments filed on 19 July 2005 have been fully considered but they are not persuasive.

Applicant's ONLY arguments are follows:

- A. Because Kubo does not teach a patterned optical layer that includes first area segment that provide a first optical retardation and second area segments that provide a second optical retardation, as specifically claimed, the applicants respectfully request the Examiner's reconsideration of the rejection of claims 11-14 and 21-24 under 35 U.S.C. 102(b) over Kubo.
- B. Yoshida does not teach a patterned optical layer that includes first area segments that provide a first optical retardation and second area segments that provide a second optical retardation, wherein the second optical retardation is substantially less than the first optical retardation, as specially claimed in each of claims 11 and 21.

Examiner's responses to Applicants' ONLY arguments are follows:

- A. Kubo teaches the liquid crystal layer including first area segment that provide a first optical retardation (being equal to product of Δn and liquid crystal thickness of transmissive region T) and second area segments that provide a second optical retardation (being equal to product of Δn and liquid crystal thickness of reflective region

Art Unit: 2871

R). The liquid crystal thickness of transmissive region is different from that of reflection region; therefore, the first and second optical retardations are different. To avoid the broad interpretation of the retardations being depended on a thickness, applicants should further define the thickness of area segments.

Besides, "a patterned optical layer" in all claims considers as Preamble of a claim.

B. Yoshida et al. teach the liquid crystal layers 102a and 102b viewed obliquely during application of an electric field, the respective apparent residual retardations of the liquid crystal regions 102a and 102b necessarily have different magnitudes and directions (paragraph 61). This retardation is called residual retardation, and the magnitude thereof is mostly in the range of about 20 nm to about 50 nm, while depending on a liquid crystal material (paragraph 42). To avoid the broad interpretation of the retardations being depended on directions, applicants should further define the retardations of area segments being independent to view directions.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

Art Unit: 2871

mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to HOAN C. NGUYEN whose telephone number is (571) 272-2296. The examiner can normally be reached on MONDAY-THURSDAY:8:00AM-4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kim H. Robert can be reached on (571) 272-2293. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

HOAN C. NGUYEN
Examiner
Art Unit 2871

Chn


ANDREW SCHECHTER
PRIMARY EXAMINER